

FINAL

FISCAL YEAR 2019

STATE CLEAN DIESEL GRANT PROGRAM

WORK PLAN AND BUDGET NARRATIVE TEMPLATE

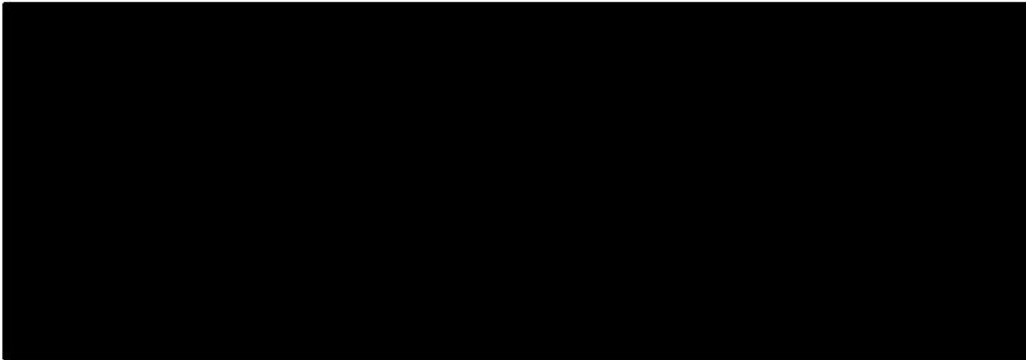
INSTRUCTIONS: States and territories applying for FY 2019 DERA State Clean Diesel Grant Program funding must use this template to prepare their Work Plan and Budget Narrative.

Please refer to the FY 2019 STATE CLEAN DIESEL PROGRAM INFORMATION GUIDE for full Program details, eligibility criteria and funding restrictions, and application instructions.

SUMMARY PAGE

Project Title:

Project Manager and Contact Information



Project Budget Overview:

	FY 2019
EPA Base Allocation	\$ 315,931
State or Territory Voluntary Matching Funds (if applicable)	\$315,931
EPA Match Incentive (Bonus) (if applicable)	\$157,966
Mandatory Cost-Share	\$0
TOTAL Project Cost	\$789,828
Other Leveraged Funds	\$1,842,000

Project Period

October 1, 2019 – September 30, 2021

Summary Statement

The Montana Department of Environmental Quality (DEQ) proposes to issue rebates to replace approximately 22 model year (EMY) 1996-2009 diesel school buses with model year 2016 or newer diesel and propane buses. The DEQ also proposes to replace three EMY 1996-2010 diesel school buses with low NOx school buses and one model year 1996-2010 diesel school bus with a battery electric school bus. The funding will replace a total of 26 diesel school buses. DEQ also analyzed an alternate scenario that would replace 30 diesel school buses with a mix of propane and diesel buses, and replace two diesel school buses with low NOx school buses. In this scenario, the funding would replace a total of 32 buses. DEQ analyzed an alternate scenario due

to uncertainty of whether a school will submit an application for an electric school bus replacement this cycle. DEQ is using Volkswagen Environmental Mitigation Settlement funds as voluntary match for FY19. Due to additional funds, DEQ will be funding school bus replacement projects statewide. Priority will be given to projects located in poor air quality areas listed in EPA's FY19 Priority County List, EPA's Green Book of Nonattainment Areas for Criteria Pollutants, and/or DEQ's Communities at Risk List. DEQ has experience with bus replacement through the cost-shared replacement of a total of 87 buses in 29 school districts located in ten poor air quality counties between 2008 and 2018. DEQ will also continue to promote the Clean Air Zone Montana (no idle) Program, and provide training to school bus drivers and school districts statewide.

The Montana DEQ maintains a webpage that details past DERA State Clean Diesel Program projects here: <http://deq.mt.gov/Energy/transportation/alttransportation>

SCOPE OF WORK

The Montana Department of Environmental Quality (DEQ) will operate the Montana Clean School Bus program to meet the priorities of the FY2019 EPA State Grant Clean Diesel Program by initiating activities that maximize public health benefits by reducing diesel emissions and diesel emissions exposure. Additionally, DEQ is leveraging Volkswagen Environmental Mitigation Trust Settlement (EMT) funds as eligible voluntary match. DEQ will also operate the program and select projects that meet the priorities and goals established in Montana's Volkswagen Beneficiary Mitigation Plan finalized in November 2018. Funding will be available for school districts statewide to spread the benefits and maximize additional funding provided through the Volkswagen DERA option. Priority will be given to projects that reduce air pollution in areas with susceptible human populations such as young children, and in disadvantaged communities that are at greater risk for health impacts exacerbated by air pollution. All schools receiving buses will join the Montana Clean Air Zone-No-Idle School Bus Program. Since 2008, this No-idle outreach project has had 127 participating of 356 school districts in the state. For outreach, DEQ will partner with the Office of Public Instruction (OPI) and the Montana Association of Pupil Transportation (MAPT) to educate school bus drivers, school transportation directors, and others to reduce diesel bus emissions by using various technologies and training.

STATE/TERRITORY GOALS AND PRIORITIES:

DEQ's School Bus Replacement Project will prioritize model year 1996-2009 and 1996-2010 diesel bus replacements (depending on replacement fuel/technology) based on several factors, as in DEQ's past programs. Due to additional funds leveraged from Volkswagen EMT Settlement funds, DEQ will expand eligibility to school districts in counties statewide. Priority will be given to projects located in counties listed in EPA's Green Book of Nonattainment Areas for Criteria Pollutants; the DEQ's Communities At-Risk document and the top 10 counties for mobile onroad NOx emissions, per the EPA 2014 Emissions Inventory data. These counties include Big Horn, Cascade, Flathead, Gallatin, Jefferson, Lake, Lewis and Clark, Lincoln, Mineral, Missoula, Ravalli, Rosebud, Sanders, Silver Bow, Stillwater, and Yellowstone counties.

Using EPA 2014 National Emissions Inventory data, DEQ determined the sources of diesel pollution and mobile sources of NOx emissions in Montana. Heavy duty diesel vehicles account for 22% of the state's mobile source NOx emissions. This is the third largest category following non-road vehicles and equipment and light duty gas vehicles. Vehicles in the heavy-duty category include transit buses, school buses, garbage trucks, delivery trucks, etc.

The Montana Office of Public Instruction's (OPI) bus fleet data shows over 2,100 (1996-2009) diesel C&D class buses eligible, and 226 additional 2010 diesel C&D class buses eligible in districts statewide.

VEHICLES AND TECHNOLOGIES:

The Montana Office of Public Instruction (OPI) oversees all activities associated with public K-12 education in Montana, including pupil transport. The OPI FY2018-2019 school bus fleet data show public schools operate approximately 3,392 school buses transporting 64,477 students and traveling over 20 million miles annually. Route information for Class C and D buses from the FY17 and FY18 replacement projects and latest school bus fleet data showed buses travel on average 10,458 miles annually. About 60 percent of the diesel school bus fleet in the state are 1996-2009 model years.

The OPI 2018-2019 bus and fleet data were used to estimate fuel use and miles for EMY 1996-2009 buses. The Montana school year is 180 days, and average miles driven do not include driver training or use for other school activities and summer school. The average route miles of 10,458 are for Class C and D buses that carry over 80 percent of the students. Each bus uses about 1,648 gallons of diesel fuel annually. Average idle time is estimated at 107 hours a year (based on experience and the EPA Diesel Emissions Quantifier). Ownership of the school buses is divided between school districts 39% and district contractors 61%. In all cases, DEQ will work with the school districts for bus replacements.

Emissions Technology Analysis

Based on past analysis of various emission technology options and alternative fuel for school buses, DEQ examined the following technology options to replace EMY1996-2009 diesel buses:

- Replacement with a EMY 2018 battery electric engine/school bus
- Replacement with a EMY2018 propane bus
- Replacement with EMY2018 diesel bus idle reduction technology

The EPA's Diesel Emissions Quantifier does not have an input option for low NOx propane buses, so DEQ did not analyze those separately.

Table 1: Technology Options for replacing MY1996-2009/2010 diesel school buses

Technology	2018 Propane		2018 Diesel & idle reduction		2018 Battery Electric	
	<u>Tons/ gallons reduced /Year</u>	<u>Lifetime tons/gallons reduced</u>	<u>Tons/gallons reduced/Year</u>	<u>Lifetime tons/gallons reduced</u>	<u>Tons/gallons reduced/ Year</u>	<u>Lifetime tons/gallons reduced</u>
NOx	0.079	1.027	0.079	1.027	0.085	1.105
PM2.5	0.006	0.078	0.006	0.078	0.006	0.078
HC	0.016	0.208	0.016	0.208	0.017	0.221
CO	0.037	0.481	0.037	0.481	0.040	0.52
CO ₂	15.8	205.4	0.037	11.8	15.8	205.4
Diesel Gallon equivalent	1,401 gallons	18,213 gallons	71 gallons	923 gallons	1,401 gallons	18,213 gallons
1 st yr. Health Benefits	\$840		\$850		\$860	

ROLES AND RESPONSIBILITIES:

DEQ will partner with OPI and school districts to share the following roles and responsibilities. DEQ will provide fiscal management, reporting to EPA, and oversight to ensure that the project is completed as described in the work plan. DEQ will issue the request for applications, rank them through a team review, and determine the final selections. OPI will work with the local school districts to identify monies from available funds to be used as a 75% match for diesel and regular propane buses, 65% match for low NOx buses, and 55% match for battery electric buses for school bus purchases. OPI will also participate in the team reviewing school bus applications and selecting schools to receive funding. Each selected school district will provide matching funds and deliverables including the scrapping/recycling of old vehicles. DEQ's deliverables checklist provides the bus data used in EPA Diesel Emissions Quantifier to develop the comparison between proposed and actual results, DEQ will submit quarterly and final reports to EPA.

TIMELINE AND MILESTONES:

DEQ's timeline and workplan are described in detail in Table 2. Briefly, DEQ will update its existing request for applications (RFA), bus deliverables checklist, and emissions verification form to meet the requirements of this EPA program. The deliverables checklist includes specifics

for the bus purchase, order, title, commitment of match, bill of lading, bus vendor invoice, pictures, verification of new bus, verification of existing bus and engine recycling/scraping, and more. The emissions verification form ensures that each bus engine VIN, serial numbers, engine emissions, and mileage are recorded in a readable format. DEQ and OPI will advertise the RFA electronically and by hard copy, sending notice to all schools and districts. DEQ and its review team will rank complete applications. Highest ranking applications will be selected for rebates until all available funds are committed. DEQ will send letters of acceptance and rejection, and conduct debriefings as requested by schools. A rebate will be signed between the school district and DEQ for each vehicle. Deliverables will be reviewed, tracked and approved by DEQ before payments are made to recipients. All contract payments go through program, fiscal, and financial services for approval before payment is made to the recipient by DEQ Financial Services.

Table 2. FY2019 Work Plan and Time Line

Month	Activity
October 1-15, 2019	DEQ completes award with EPA and updates the Request for Applications to develop a list of interested school districts with matching funds. DEQ and OPI team develop internal processes for outreach and evaluation of applications.
October 15, 2019	DEQ and OPI distribute Request for Applications electronically and in hard copy
October 15-December 13, 2019	Application period for local school districts. DEQ responds to questions and provides technical support for the process. Advertised cut-off date for questions. Responses posted on website.
December 13-20, 2019	Applications checked for completeness (letter of commitments for match); team evaluates applications, identifies needed clarifications; determines consensus on application ranking. DEQ submits quarterly report.
January 2020- February 2020	DEQ to notify successful and unsuccessful applicants; de-brief unsuccessful applicants as needed; initiate the rebate/contracting process of successful applicants. Signed contracts are due by the end of February.
March 2020- July 2020	Schools to order buses in early March. DEQ submits quarterly report.
June 2020	Work with schools and bus drivers through the Montana Association of Pupil Transportation to implement No-idle program and outreach.
July 2020 -December 2020	Use Bus Deliverables checklist to track; purchase orders; emissions equipment on replacement bus; mileage and fuel use of existing bus; recycling of bus; and final deliverables for new buses. Track and verify recycling of old buses. Generate reports for EPA. Maintain administrative records. DEQ submits quarterly reports.
January 2021-May 2021	Complete rebates for replacement of school buses. DEQ submits quarterly report.
June 2021	Work with schools and bus drivers through the Montana Association of Pupil Transportation to implement No-idle program and outreach.
July- September 2021	Gather final bus data (fuel and miles) to develop the quantifier outputs (health benefits) and draft final report.
December 2021	Complete accounting and reporting to EPA; submit final report.

DERA PROGRAMMATIC PRIORITIES:

DEQ Clean School Bus program will make funding available to school districts statewide. The school bus application ranking criteria prioritizes replacing buses in areas of poor air quality and those that have the highest mobile sources of onroad NOx emissions. These areas include school districts in Big Horn, Cascade, Flathead, Gallatin, Jefferson, Lake, Lewis and Clark, Lincoln, Mineral, Missoula, Ravalli, Rosebud, Sanders, Silver Bow, Stillwater, and Yellowstone counties. Many of these counties contain many of Montana's larger urban areas; have greater populations more at risk from diesel emissions exposure including children, and those with respiratory diseases such as asthma. Many of these priority air quality areas have a high number of acute asthma incidents in school-age children. DEQ's ranking criteria will focus on replacement of school buses in areas with known air quality problems as submitted to EPA in 2018; in areas of EPA's Green Book of Nonattainment Areas for Criteria Pollutants; in the DEQ Communities At-Risk document and those counties that are in the top 10 highest mobile sources of onroad NOx emissions. DEQ's previous criteria and experience guarantee that the poorest air quality areas are addressed.

EPA'S STRATEGIC PLAN LINKAGE AND ANTICIPATED OUTCOMES/OUTPUTS:

This project supports EPA's FY2018-22 Strategic Plan. Goal 1: "Core Mission: Deliver real results to provide Americans with clean air, land, and water and ensure chemical safety, Objective 1.1, "Improve Air Quality." DEQ's outputs include two possible scenarios. First, replacing 26 EMY 1996-2009 diesel school buses with 16 EMY 2016 or newer diesel, 6 EMY 2018 propane buses, 3 EMY2018 low NOx buses, and one 2018 battery-electric bus in priority areas. For low NOx buses, since the Diesel Emissions Quantifier (DEQ) does not include a low NOx input for vehicle replacement options, we assumed those buses were regular propane buses. The second scenario would include replacing 32 EMY 1996-2009 buses with 23 EMY 2016 newer diesel buses, 7 EMY 2018 propane buses and 2 EMY 2018 low NOx buses. The outputs will depend on whether DEQ receives applications from schools for a battery electric and low NOx replacement buses. The replacement buses with a 2020 delivery date are EMY 2016 or newer, with a direct-fired heater for idle reduction, except for propane, low NOx and electric buses. The outcomes include annual reductions of NOx, PM, CO, CO₂, and fuel as shown in Table 3, Table 4 EPA-Diesel Emissions Quantifier Results and in Table 5 Outputs.

Table 3: Scenario 1: Summary of EPA Diesel Emissions Quantifier Output Results to replace 26 EMY 1996-2009 diesel school buses with 16 EMY 2016 diesel emissions or newer; 6 EMY 2018 propane buses; 3 EMY 2018 low NOx buses, 1 2018 battery electric bus

Annual	NOx (tons/year)	PM (tons/year)	HC (tons/year)	CO (tons/year)	CO ₂ (tons/year)	Diesel-Equivalent (gallons/year, based on CO ₂)
Baseline of Replaced Buses	1.961	0.141	0.393	0.911	362.5	32,223
Percent Reduced	93.2%	98.5%	95.7%	93.0%	34.0%	34.1%
Tons Reduced Per Year	1.828	0.139	0.376	0.848	123.1	10,945
Lifetime tons reduced	NOx (tons)	PM (tons)	HC (tons)	CO (tons)	CO ₂ (tons)	Diesel-Equivalent (gallons)
Amount Reduced	23.758	1.804	4.890	11.021	1,600.8	142,285
Capital Cost Effectiveness	NOx (\$/ton reduced)	PM (\$/ton reduced)	HC (\$/ton reduced)	CO (\$/ton reduced)	CO ₂ (\$/ton reduced)	Diesel-Equivalent (\$/gallons)
	\$136,377	\$1,795607	\$662,591	\$293,996	\$2,204	\$18.52
	EPA Cost Effectiveness (EPA \$/total tons pollutants)		Total Lifetime Tons			
	\$1,604		1,642.27			
Health Benefits County and State	Annual Diesel PM Reduced(tons)	Annual Benefits				
Flathead Co., Montana	0.035	\$4,700				
Missoula Co., Montana	0.035	\$6,300				
Yellowstone Co., Montana	0.035	\$2,400				
Gallatin Co., Montana	0.035	\$5,900				
Total	0.139	\$19,000				

Table 4: Scenario 2: Summary of EPA Diesel Emissions Quantifier Output Results to replace 32 EMY 1996-2009 diesel school buses with 23 EMY 2016 diesel emissions or newer; 7 EMY 2018 propane buses; 2 EMY 2018 Low NOx buses

Annual	NOx (tons/year)	PM (tons/year)	HC (tons/year)	CO (tons/year)	CO ₂ (tons/year)	Diesel-Equivalent (gallons/year, based on CO ₂)
Baseline of Replaced Buses	2.814	0.202	0.564	1.308	520.1	46,233
Percent Reduced	93.1%	98.5%	95.6%	94.0%	33.8%	33.8%
Tons Reduced Per Year	2.619	0.199	0.539	1.215	176.0	5,217
Lifetime tons reduced	NOx (tons)	PM (tons)	HC (tons)	CO (tons)	CO ₂ (tons)	Diesel-Equivalent (gallons)
Amount Reduced	34.050	2.588	7.012	15.796	2,288.3	67,821
Capital Cost Effectiveness	NOx (\$/ton reduced)	PM (\$/ton reduced)	HC (\$/ton reduced)	CO (\$/ton reduced)	CO ₂ (\$/ton reduced)	Diesel-Equivalent (\$/gallons)
	\$128,196	\$1,686,424	\$622,541	\$276,340	\$1,908	\$12.95
	EPA Cost Effectiveness (EPA \$/total tons pollutants)		Total Lifetime Tons			
	\$1,122.62		2,347.74			
Health Benefits County and State	Annual Diesel PM Reduced(tons)	Annual Benefits				
Flathead Co., Montana	0.050	\$6,800				
Missoula Co., Montana	0.050	\$9,000				
Yellowstone Co., Montana	0.050	\$8,500				
Gallatin Co., Montana	0.050	\$3,500				
Total	0.199	\$28,000				

Table 5. Anticipated Outputs and Outcomes

Activity/Scenario 1: replace 26 EMY 1996-2009 diesel school buses with 16 EMY 2016 diesel emissions or newer; 6 EMY 2018 propane buses; 3 EMY 2018 low NOx buses, 1 2018 battery electric bus

Outputs Scenario 1	Outcomes Scenario 1
<ol style="list-style-type: none"> 1) Over 2600 hours of idling reduced annually 2) Increased outreach of Clean Air Zone/No-Idle school bus (Clean Air Zone Montana to new districts) 	Short term
	<ol style="list-style-type: none"> 1) Improved fuel economy from 6 mpg to 9mpg or better for diesel and propane buses and over 15mpge¹ for electric buses 2) Additional schools participate in the Clean Air Zone- No Idle program
	Medium term
<ol style="list-style-type: none"> 3) 26 EMY 1996-2009 buses replaced with 16 EMY 2016 or newer diesel buses; 6 EMY 2018 propane buses; 3 EMY 2018 low NOx buses, 1 2018 battery electric bus 	<ol style="list-style-type: none"> 1) Dollars and gallons of diesel saved for schools selected to participate. 2) 355,680 riders experience reduced exposure to emissions annually (See Appendix) 3) Estimated annual net reduction of: <ul style="list-style-type: none"> ▪ 1.828 NOx /yr. ▪ 0.139tons Pm 2.5/yr. ▪ 0.376 tons HC/yr. ▪ 0.848tons CO/yr. ▪ 123.1 tons CO₂/yr. ▪ 126.29 total pollutant tons/yr. ▪ 10,945 diesel gallon equivalents/yr.
<ol style="list-style-type: none"> 4) 26 contracts made to school districts in targeted air quality areas and communities at risk 	
<ol style="list-style-type: none"> 5) Final report comparing actual pollution/emission and fuel reductions with proposal. 	
	Long term Estimated bus lifetime reduction of: <ul style="list-style-type: none"> ▪ 23.758 NOx/lifetime ▪ 1.804 tons PM 2.5/lifetime ▪ 4.89tons HC/lifetime ▪ 11.021 tons CO/lifetime ▪ 1,600.8 tons CO₂/lifetime ▪ 1,642 total pollutant tons/lifetime ▪ 142,285 lifetime diesel equivalent gallons reduced

¹ Miles per gallon equivalent for electric buses

Table 6. Anticipated Outputs and Outcomes

Activity/Scenario 2: replace 32 EMY1996-2009 diesel school buses with 23 EMY2016 diesel emissions or newer; 7 EMY2018 propane buses; 2 EMY2018 Low NOx buses

Outputs Scenario 2	Outcomes Scenario 2
1) Over 3,200 hours of idling reduced annually 2) Increased outreach of Clean Air Zone/No-Idle school bus (Clean Air Zone Montana to new districts)	Short term
	1) Improved fuel economy from 6 mpg to 9 mpg or better for diesel and propane buses 2) Additional schools participate in the Clean Air Zone- No Idle program
3) 32 EMY 1996-2009 diesel school buses with 23 EMY 2016 diesel emissions or newer; 7 EMY 2018 propane buses; 2 EMY 2018 Low NOx buses 4) 32 contracts made to school districts in priority air quality areas and communities at risk. 5) Final report comparing actual pollution/emission and fuel reductions with proposal.	Medium term
	1) Dollars and gallons of diesel saved for schools selected to participate. 2) Riders experience reduced exposure to emissions annually (See Appendix) 3) Estimated annual net reduction of: <ul style="list-style-type: none"> ▪ 2.619 tons NOx /yr. ▪ 0.199 tons PM 2.5/yr. ▪ 0.539 tons HC/yr. ▪ 1.215 tons CO/yr. ▪ 176 tons CO₂/yr. ▪ 180.57 total pollutant tons/yr. ▪ 5,217 diesel gallon equivalents/yr.
	Long term
	1) Estimated bus lifetime reduction of: <ul style="list-style-type: none"> ▪ 34.050 tons NOx/lifetime ▪ 2.588 tons PM 2.5/lifetime ▪ 7.012 tons HC/lifetime ▪ 15.796 tons CO/lifetime ▪ 2,288.3 tons CO₂/lifetime ▪ 2,347.75 total pollutant tons/lifetime ▪ 67,281 lifetime diesel equivalent gallons reduced 2) Reduced long-term exposure of children to diesel emissions

SUSTAINABILITY OF THE PROGRAM:

DEQ will work toward the environmental outputs and outcomes as described in this work plan. DEQ will meet the priorities, reporting and other requirements outlined in the Energy Policy Act of 2010, 42 USC 16131 et seq.

DEQ determined that replacing school buses with propane, low NOx, cleaner diesel and battery electric technology would result in cost-effective health benefits for targeted FY2019 funding. Assuming replacements are evenly split between four of the larger priority areas, the EPA Diesel Emissions Quantifier estimated first-year health benefits valuing \$19,000. The buses to be

replaced transport school children so the project will provide reduced exposure and health benefits to susceptible populations for the remaining useful life of the buses.

In scenario 2, DEQ estimated that replacing old school buses with a mix of cleaner diesel, propane and low NOx buses would also result in cost-effective health benefits for targeted counties eligible for FY2019 funding. The EPA Diesel Emissions Quantifier estimated first-year health benefits valuing \$28,000.

Since 2008, DEQ has worked with state agencies, business organizations, and individual school districts to provide community-type stakeholder input into the Montana Clean Diesel Program and the School Bus Replacement Project. DEQ works closely with OPI to implement the School Bus Replacement Project and educate school bus drivers about the benefits of reducing idling and of cleaner diesel technology for school buses.

This 2019 Clean School Bus Project Scenario 1 is estimated to conserve 10,945 diesel gallon equivalents annually and 142,291 diesel gallon equivalents over the lifetime of the buses (See Table 3). Scenario 2 is estimated to conserve 5,217 diesel gallons equivalent annually and 67,281 diesel gallon equivalents over the lifetime of the buses (See Table 4). These reductions are due to idle reduction technology, replacement of diesel buses with propane, low NOx and electric buses. The replacement diesel buses will have direct fired heaters installed by the manufacturer. These heaters reduce idling time. Use of new buses ensures updated, energy efficient drive trains integrated with the engines that further reduce diesel consumption. DEQ's experience shows that the fuel economy for EMY 1996-2009 school buses is generally between 6 and 7 miles per gallon (mpg). School bus vendors estimate that EMY 2018 and newer propane and low NOx buses should achieve between 9 to 9.5 mpg depending on make and engine. Battery electric buses are estimated to achieve an average of around 15mpge.

The Clean School Bus Project addresses the EPA Region 8 priority of promoting idle reduction strategies and technologies to reduce diesel emissions. The new diesel buses will arrive with direct-fired heaters. Bus vendors will provide training on the equipment. The new buses help to protect children's health because the cleaner diesel buses will reduce children's exposure to diesel emissions within and along the routes. DEQ will provide additional idle reduction training for school bus drivers at the MAPT training sessions and their annual conference. DEQ's trainings earn school bus drivers credit toward their accreditation to be a qualified bus driver.

BUDGET NARRATIVE

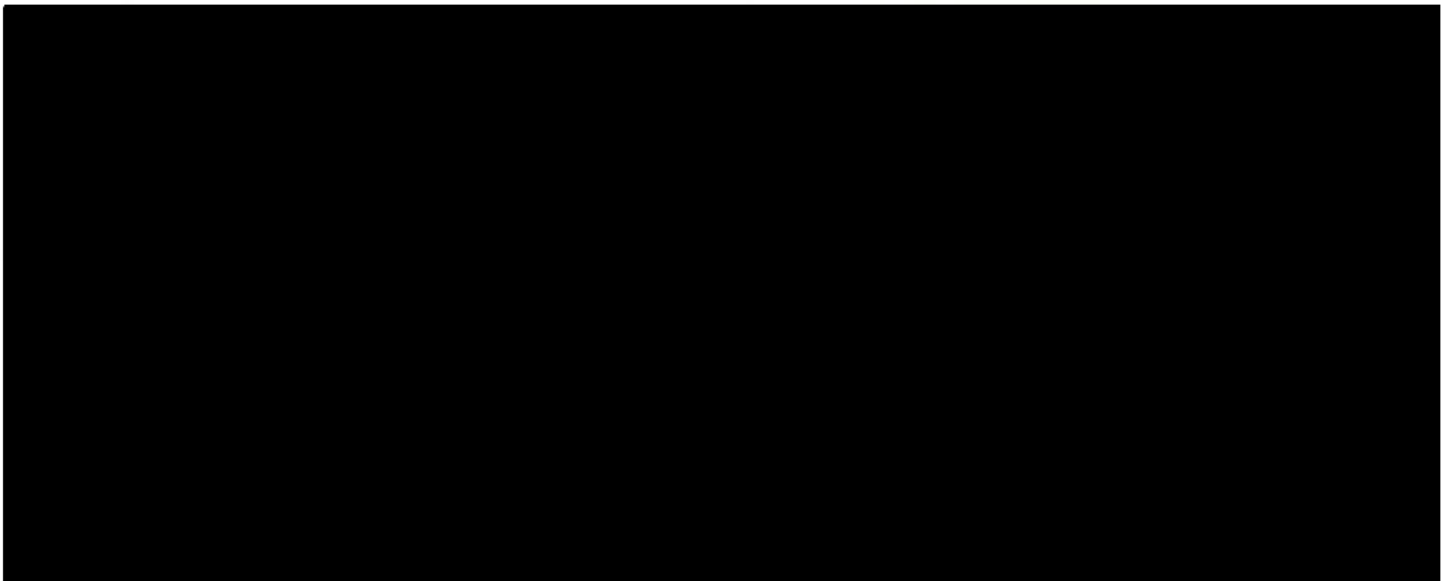
Itemized Project Budget

Budget Category	EPA Allocation	Mandatory Cost-Share	Voluntary Match (if applicable)		Line Total
			VW Mitigation Trust Funds	Other Funds	
1. Personnel	26,661		0		26,661
2. Fringe Benefits	9,331		0		9,331
3. Travel	2,527		0		2,527
4. Equipment			0		0
5. Supplies	433		0		0
6. Contractual			0		0
7. Other	409,797		303,780		713,577
8. Total Direct Charges (sum 1-7)	448,749		303,780		752,528
9. Indirect Charges	25,148		12,151		37,300
10. Total (Indirect + Direct)	\$473,897		\$315,931		\$789,828
11. Program Income	0				
12. Other Leveraged Funds*	0		0		\$1,842,000

*Do not include Other Leveraged Funds on SF-424 or SF-424A

Explanation of Budget Framework

- **Personnel** - List all staff positions by title. Give annual salary, percentage of time assigned to the project, and total cost for the budget period.



- **Fringe Benefits - Identify the percentage used, the basis for its computation, and the types of benefits included.**



- **Travel - Specify the mileage, per diem, estimated number of trips in-State and out-of-State, number of travelers, and other costs for each type of travel.**

Travel	EPA Allocation	Mandatory Cost-Share	Voluntary Match (if applicable)		Line Total
			VW Mitigation Trust Funds	Other Funds	
(6) 1-3-day trips for 4 employees	2,527		-		2,527
					-
Total Other	2,527		-		2,527

- **Supplies - “Supplies” means all tangible personal property other than “equipment”.**

Supplies	EPA Allocation	Mandatory Cost-Share	Voluntary Match (if applicable)		Line Total
			VW Mitigation Trust Funds	Other Funds	
General Office Supplies	433				433

- **Equipment – No equipment will be purchased with this grant.**
- **Contractual - Identify each proposed contract and specify its purpose and estimated cost. DEQ does not anticipate any contractual costs. These are shown in the “Other” category**

- **Other - List each item in sufficient detail for EPA to determine the reasonableness and allowability of its cost.**

Other	EPA Allocation	Mandatory Cost-Share	Voluntary Match (if applicable)		Line Total
			VW Mitigation Trust Funds	Other Funds	
Bus Replacement	406,797		303,780		710,577
Leased Vehicle	500				500
MAPT Conference	2,500				2,500
Total Other	409,797		303,780		713,577

- **Indirect Charges - If indirect charges are budgeted, indicate the approved rate and base.** Indirect costs are those incurred by the grantee for a common or joint purpose that benefit more than one cost objective or project, and are not readily assignable to specific cost objectives or projects as a direct cost. In order for indirect costs to be allowable, the applicant must have a federal or state negotiated indirect cost rate (e.g., fixed, predetermined, final or provisional), or must have submitted a proposal to the cognizant Federal or State agency. Examples of Indirect Cost Rate calculations are shown below:
 - **Personnel and Fringe** $(0.24 \times (\$26,661 + \$9,331) = \$8,638)$
 - **Operating Indirects:**
 - **EPA Allocation** $(0.04 \times \$412,757 = \$16,510)$
 - **Voluntary match** $(0.04 \times \$303,780 = \$12,152)$
 - **Operating indirects** \$28,661
 - **Total Indirect Charges** \$37,299

Administrative Costs Expense Cap- will not use more than 15% of total project costs to cover administrative expenses.

Matching Funds and Cost-Share Funds- N/A

Funding Partnerships

Other Leveraged Funds – \$1,842,000. DEQ will provide rebates to schools. Based on scenario 2 of this workplan, the schools will cover the required cost share for replacing buses. These funds will replace 16 diesel buses with an estimated cost of \$90,000 @ 75% x 16 = \$1,080,000; 6 propane buses with an estimated cost of \$90,000 @ 75% x 6 = \$405,000; 3 low NOx buses with an estimated cost of \$90,000 @ 65% = \$175,500; 1 electric bus with an estimated cost of \$330,000 @ 55% x 1 = \$181,500 Total = \$1,842,000.

Appendix

Fleet Description

DEQ used the latest OPI FY 2019 Bus Information by School System list and the data to identify potential buses for replacement in the select counties. The 2018-2019 Pupil Transportation data (latest complete year) identified over 2,100 MY 1996-2009 class C & D buses and 226 MY 2010 class C & D buses owned by schools and districts. Using 2018-2019 Pupil Transportation data and data from previous replacement projects (2016, 2017, 2018), the average class C & D diesel bus travels 10,458 miles a year, uses 1,648 gallons of diesel, with an estimated engine idle time of 107 hours per school year. Ridership data from the 2017 and 2018 School Bus Replacement Project shows that each bus transports between 33 and 102 students twice daily. The median ridership for the 2017 and 2018 replacement buses was 51 students, twice daily or 102 riders a day. For 13 buses (1,326 riders a day, 180 days a year) that is equal to 238,680 direct riders impacted for FY2019.

The EPA recommended fleet description follows. Columns for "Current Tier, Engine Family Name, Current Tier Level, Annual Usage Rate, New Engine Family Name, New Engine Displacement, New Tier Level, New Standard Level, Technology Unit Installation Cost have been deleted because some items do not apply to on-road vehicles, and other items will not be known until the school bus applications have been evaluated.

Recipient Information



Project 1 Information

Project Name	Organization Performing Project	Target Fleet	Number of Vehicles	City	County	State	Region	Funding Amount	Additional Funding Source	Additional Funding Amount	Public Benefit
MT School Bus Replacement	DEQ with various schools	School Bus	26	Various	Various	MT	8	473,897 EPA 157,966 VW EMT	OPI, School Districts	1,842,000	yes

Fleet 1 Information:

[illegible]

2020	Vehicle/Equipment Replacement	Direct Fired Heater	Diesel	TBD	90,000
2020	Vehicle/Equipment Replacement	Direct Fired Heater	Diesel	TBD	90,000
2020	Vehicle/Equipment Replacement	Direct Fired Heater	Diesel	TBD	90,000
2020	Vehicle/Equipment Replacement	Direct Fired Heater	Diesel	TBD	90,000
2020	Vehicle/Equipment Replacement	Direct Fired Heater	Diesel	TBD	90,000
2020	Vehicle/Equipment Replacement	Direct Fired Heater	Diesel	TBD	90,000
2020	Vehicle/Equipment Replacement	Direct Fired Heater	Diesel	TBD	90,000
2020	Vehicle/Equipment Replacement	Direct Fired Heater	Diesel	TBD	90,000
2020	Vehicle/Equipment Replacement	Direct Fired Heater	Diesel	TBD	90,000
2020	Vehicle/Equipment Replacement	Propane	Propane low NOx	TBD	90,000
2020	Vehicle/Equipment Replacement	Propane	Propane low NOx	TBD	90,000
2020	Vehicle/Equipment Replacement	Propane	Propane low NOx	TBD	90,000
2020	Vehicle/Equipment Replacement	Electric	Electric	TBD	330,000